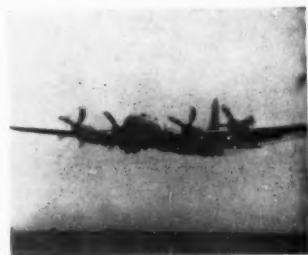


BUSINESS

AIR TRANSPORTATION



THE AIR MAGAZINE FOR THE BUSINESS EXECUTIVE



Our Wish
for
One World:
A cargo of
Peace on Earth,
Good Will
toward
Men



VOL. 20 • No. 1

Illustrating AIR COMMERCIAL

JANUARY, 1957

How Does Your Package Get?

Sea, Land and Air Cargo

A Guide to Air Shipping Via The Port of New York

Introducing . . . The Universal Freighter

The Part the Indirect Air Carrier Plays in Stimulating International Trade

THE WORLD'S FIRST AND ONLY AIR CARGO MAGAZINE



Spotlighting

the greatest trend in
transportation history

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Carrier—

Freight Forwarder

YOUR BIG OPPORTUNITY TO GROW WITH
AMERICA'S FASTEST GROWING INDUSTRY

get ahead with
air cargo

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NEW YORK 4, N. Y.

AIR TRANSPORTATION

The World's First and Only Air Cargo
Magazine . . . Established
October, 1942



MEMBER OF CONTROLLED CIRCULATION
AUDIT, INC.

AIR TRANSPORTATION, published once each month, thoroughly covers the entire air cargo industry for the benefit of all those engaged in shipping and handling domestic and international air freight, air express, and air parcel post, as well as using the domestic and international air mail services. Included in AIR TRANSPORTATION'S wide coverage are: air shipping, cargo plane development, rates, packaging, materials handling, documentation, air cargo terminal development, insurance, routing, interline procedures, new equipment, commercial airlines, military air transport service, air freight forwarders, personnel and business air travel.

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The Part the Indirect Air Carrier Plays In Stimulating International Trade

By CHARLES L. GALLO

President, Air Express International Agency, Inc.

THE MOST IMPORTANT single new development in air transportation today is the birth of the indirect air carrier providing an added stimulus to the constantly growing dependence of shippers on air transportation for the movement of their cargoes.

Recognition by the Civil Aeronautics Board of the international air freight forwarder as an indirect air carrier establishes the forwarder on virtually the same footing as a direct air carrier except for the actual operation of aircraft. The indirect air carrier is required to publish and file a tariff with the Civil Aeronautics Board and is subject to the same economic regulations as an air carrier. Such registration provides a stability to the international air freight forwarding industry from a legal point of view hitherto unknown, in that operations are conducted strictly in accordance with the terms and conditions contained in its published tariff which clearly outlines the limits of liability and type of service offered together with definite rates spelled out to the various destinations where service is provided.

The inherent advantage of speed in air transportation is preserved and enhanced by the indirect air carrier since primarily it is his job to expedite the movement of air cargo via the direct air carriers. Essentially the indirect air carrier operates as a gathering and facilitating system up to the point of departure via the direct air carrier and as a distributing facility at destination. The service by the indirect air carrier prior to departure is keyed to a high level of daily performance entailing the employment of day and evening shifts in the export and trucking departments manned by skilled, experienced personnel in the handling of so-called "hot" cargo as virtually most air cargo falls in this category today. Constant, daily contact with all airlines enables the indirect air carrier to route cargo expeditiously, avoiding backlogs or bottlenecks. Unless cargo moves, the indirect air carrier is not able to realize any revenue. Air Cargo in the storage bin is "deader'n yesterday's newspaper."



Air cargo shipments are consigned directly to the indirect air carriers' agents where special arrangements have been made to process shipments through customs expeditiously, avoiding from one to several days' delay.

Interestingly enough, this premium service is offered to the public at rates less than those charged by the direct air carriers. Since the indirect air carrier operates on the principle of consolidation, taking advantage of the "spread" in air carrier rates as, for example, the difference in cost between shipments weighing less than one hundred pounds and the cost of shipments weighing more than one hundred pounds, he is enabled to pass back to the shipper part of the spread.

In October, 1951, the scheduled international air carriers announced an across-the-board rise of approximately 10% on general commodity rates. At the same time, the minimum shipment charge to transatlantic destinations was upped from \$5.00 to \$7.00 from New York. The charge for minimum shipments made by A.E.I.A. as an indirect carrier remains at \$4.00. The \$1.00 service fee normally charged by a forwarder or agent on regular air shipments is not made on shipments handled by the indirect air carrier under his own tariff. Thus a \$4.00 charge represents a 50% saving to the shipper on minimum shipments across the Atlantic.

Even in the short period since the October rate rise, A.E.I.A. has handled many minimum shipments at the \$4.00 rate which ordinarily would not have moved as air cargo. The low minimum rate is stimulating the movement of samples via air to prospective overseas markets which later will be reflected in the movement of larger shipments via air or via ocean freight.

Air Express International Agency, Inc., was licensed as an indirect air carrier in March of last year and today publishes rates to 47 transatlantic destinations and 13 Latin American destinations in addition to rates to Hawaii and Manila, offering general commodity rates on shipments weighing less than one hundred pounds at 5% less

(Continued on page 32)

"I have often wondered how many businessmen buy a piece of property or go into a transaction involving sums of money without getting legal advice. And still, we have contractor after contractor signing contracts and bidding and accepting same without having the least idea of what is required to preserve, package and pack material he is producing."

—Herschel Bearman



H. BEARMAN

How Does Your Package Go?

by Lyne S. Metcalfe

The field of functional packaging is at last being recognized by the transport supply industries supplying government needs as one of the last virgin thresholds upon which cost reductions can be effected in the marketing of a finished product. Recognition, however, is complicated by the lack of knowledge concerning the scientific approach to packaging of transport material, the lack of experienced personnel for fostering such a program and the lack of understanding of material limitations.

Today, skilled engineers are attempting to provide to the transport manufacturer a service which constitutes somewhat more than the supply of packaging materials. Therefore, it is necessary to have a consultation service and act in an advisory capacity wherever consideration must be given to such elements as:

- 1—*Package design.*
- 2—*Setting up of adequate production packaging facilities.*
- 3—*Interpretation of Government contracts and the applicable packaging specifications for the proper selection of application and handling of the various packaging components.*

And Herschel Bearman tells us how.

MANY ARE THE SPECIAL PROBLEMS which confront the transport supply manufacturer in time of war or defense production, and increasingly intricate are the special technical problems which such industries must solve. All this is due primarily to vast technological developments which not only resulted from war and peacetime experience.

With efficient transportation of transport needs under global supply requirements becoming ever more vitally important and also intricate, the science

of protective packaging of all types of transport products from planes to small parts and supplies takes on added importance, as clearly evidenced by the attention given by U. S. Procurement leaders.

In fact, specifications for protective packaging of thousands of items in transport equipment and supplies are included in the conditions of most production contracts and sometimes the supplier finds himself or his organization facing difficulties in clearly understanding the official demands.

Years of practical experience and serious study of the basic problems in protective packaging of thousands of items in the commodity and equipment industries and ownership of the most comprehensive official documentary library on this subject, makes Herschel Bearman one of the outstanding specialists in this field. And the importance of a practical discussion of the basic ideas and principles involved in following official protective packaging specs, is of great timeliness now.

Bearman claims: "Any private contractor, manufacturing plant, or producer bidding on or working on a government contract involving any dollar volume is riding on a hot seat if he fails to employ directly or indirectly the services of a man either in his own organization or outside who is versed in the knowledge of and the application of specifications concerned with preser-

(Continued on Page 28)



by George Kraigher

George Kraigher, manager of the Aviation Department of Arabian American Oil Company, has a background which includes both combat and commercial flying in many parts of the world.

Born in Yugoslavia, Kraigher was an officer and pilot in the Serbian and Yugoslav air forces during the first World War. He became a citizen of the United States in 1927 and in the second World War was a colonel in the United States Army Air Forces.

With a total flying time of approximately 14,700 hours, Kraigher did a great deal of pioneer flying for Pan-American Airways in Mexico, Central America, South America, Africa, the Middle East and India. After receiving a commission as Lieutenant Colonel in the United States Air Forces in 1942, Kraigher was placed in command of the 12th Transport Group on the Gold Coast of West Africa. His subsequent commands included operations activities in the North African Sector and the Air Crew Rescue Unit of the Mediterranean Allied Air Forces. His decorations include two Legion of Merits, one Silver Star and five Air Medals.

Air transport operations and maintenance, pilot training problems, and construction and improvement of airports have occupied Kraigher during recent years. In addition to English he speaks Yugoslav, Spanish, French, Italian and German.



An Aramco technician explains fire fighting equipment to Saudi Arab Aviation Department trainees at Dhahran Airport, for safety plays a big part in any industry. Plane in background is one of Aramco's DC-3's getting ready to fly back to the U. S. A.



One of the Arabian American Oil Company's own DC-4's ready to take off from the Dhahran Airport in Saudi Arabia. Behind it a TWA plane is being loaded. Aramco finds having its own air fleet indispensable for keeping itself in highly active business.

ARAMCO'S eastbound overseas air cargo totals shot to an alltime high during the month of October, 1951, when 125,000 lbs. of freight were flown to Arabia on 25 separate flights.

Although far above average, such figures serve to indicate very strongly the direction being taken by the Arabian American Oil Company in its air freight activities. Inside Saudi Arabia, too, the records of a recent "normal" month of planes operating out of Dhahran assume prominent proportions: 205 total flights, 1,000 hours flying, 1,000,000 passenger miles, 58,000 freight ton-miles, 2,700 passengers carried, 401,000 lbs. total freight carried and 141,000 total miles flown.

A Backward Glance

This is all a far cry from the inception of air cargo within the realm of Aramco operations back in the years just following World War II, when activities modestly centered about setting up house for an Aviation Department in Saudi Arabia. Each trip that went to Dhahran, then carried with it mostly spare parts for the airplanes themselves. The heart and soul of the air duties were foreseen to be first of all a matter of adequate maintenance facilities, repair shops, overhaul equipment, and trained, acclimated personnel. Now stockrooms have blossomed to where they contain some 6,000 separate items. Repair facilities include shops for welding and painting, magniflux flaw detection, carburetor testing and radio work. Shops are equipped to do virtually all maintenance work except for some of the more highly specialized engine and instrument repair. Here then, air cargo gives itself a firm helping hand, for vital parts can be back in the United States, returned to factories and once again in use in Saudi Arabia in only a matter of weeks. The same chore performed via ship transportation would entail three to six months or more.

In 1947, the shadow of cargo wings began to broaden over Aramco operations. In that year, eight C-47's were ferried across the ocean to their destination, Dhahran Airport. Starting the migration in April and continuing until all had been delivered safely, each of the two-engined aircraft carried with them a load of spare parts which were to prove through the ensuing years, a guarantee of safety and good mechanical health.

The DC-3's found a welcoming home in Saudi Arabia, and rightfully so for they soon became the backbone of the Saudi Arabian air operations. Their ability to carry 25 persons, three tons

of cargo or a combination of both, fitted in with the particular needs that were arising as the oil operations gathered full momentum in the more than 400,000 sq. mile concession area.

Life With Air Cargo

By 1948 "the Flying Camel" and "the Flying Gazelle," a pair of DC-4's, were part of the Aramco air fleet. The Gazelle, equipped with a fold-a-way "payload" seats assumed the natural role of cargo workhorse when necessary, and the Camel easily handled the dual duties of passenger and cargo carrying.

Aside from the fact that Aramco's aviation set-up is physically large (Aramco is the largest civilian user of aircraft aside from the airlines themselves), the operation in the air, especially the freight-carrying end, strikes a particular significance for each function of the extensive oil operations. The convenience of air cargo has meant a great deal to the constantly waged preventive medicine campaign carried on by Aramco's Medical Department in Saudi Arabia. Centralized at the well-equipped Dhahran Health Center which is one of the most modern hospitals in the Middle East, Aramco medical facilities strike out into the Arabian hinterlands enveloping the oil operational areas and control or, in many cases, stamp out diseases that were once considered the scourges of Saudi Arabia. Periodically supplied by air with the vaccines, serums and medicines needed, the incidence of such dreaded maladies as malaria, small pox, cholera and typhus have been reduced to nominal percentages of what they once were. The new sense of well-being afforded to Arab villagers in the surrounding areas and to oilmen on the Aramco payroll, is in itself rewarding to Aram-

co. It is just another mark on the credit side of the Company's personal Point IV ledger.

One particular occasion where air cargo shipment actually helped to prevent impending epidemic conditions took place about three years ago. A hurry cable arrived in the United States one Saturday morning advising that cholera was breaking out in the Middle East. In 48 hours most of the needed 150,000 units of vaccine were assembled, packed in ice and en route out of New York via the Camel. The remainder went by Navy plane three days later. The entire shipment ran well over a ton and played a large part in averting wide-scale spread of the dread disease.

At least once each month an ill or injured Aramco employee is returned to the United States as a stretcher case aboard one of the DC-4's. These employees, faced with long convalescence or in need of special hospital care obtainable only in America, find a swift upsurge of their morale in the knowledge that in the shortest possible time they will be back in the United States. In the same way, Aramco's smaller planes operating inside Saudi Arabia frequently must perform ambulance service transporting accident cases from outlying points back to the Dhahran Health Center.

Air Lift Service

Aramco's Personnel Department probably has never computed the total quantity of employees' eye glasses shipped to the Field over the years, but there is little doubt that such figures would run into the hundreds of pairs. Lack of adequate optometrical facilities in the Middle East makes the Aramco air lift the best bet for delivery of a pair of sometimes sorely needed spectacles from the States.

Amongst the Operations Departments in the Field, Engineering certainly has had recent benefit from the swift regularity of Aramco's overseas air cargo. Three centrifugal pumps, each weighing almost 2500 lbs. and valued at about \$10,000 were flown to Arabia on short notice a few months ago. Their arrival in Arabia insured the flow to Ras Tanura of an additional 75,000 barrels of crude oil a day for off-shore shipment.

All along the line similar savings in time have meant savings in operational costs. Financial quarters received a helping hand some years ago when gold

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Introducing . . . THE UNIVERSAL FREIGHTER

WITH THE ACCENT ON CARGO growing continually stronger, and the increased need for larger, more efficient cargo planes more insistent, England, or more particularly, Blackburn and General Aircraft, Ltd., has come up with a great, big plane designed for speed, economy of operation and a larger payload. Blackburn and General call it the *Universal Freighter*.

Resembling the Fairchild *Packet* in bulk, but without the twin fuselage that characterizes the American cargo plane, the *Universal* was featured at the 1951 Society of British Aircraft Constructors' Display at Farnborough, both in the Exhibition Hall and in the flying demonstrations.

The *Universal Freighter*, which is the civil variant of the GAL 60, is Britain's largest transport aircraft and is designed for economic haulage of bulky cargoes. With the movement of freight by air becoming a more and more important facet of air transportation, the *Universal*, with its 18 and a half ton payload and its low operating cost, is ideally suited for world-wide distribution.

On June 20, 1950, the GAL 60 Military Transport made its maiden flight from Brough Airfield and has completed numerous satisfactory test flights in the intervening months. This Prototype which has recently been fitted with a bogey undercarriage, is similar in many respects to the civil *Universal Freighter* Mark 1. The *Universal Freighter* was designed to operate with economy from airfields anywhere in the world and the Mark 2 version incor-

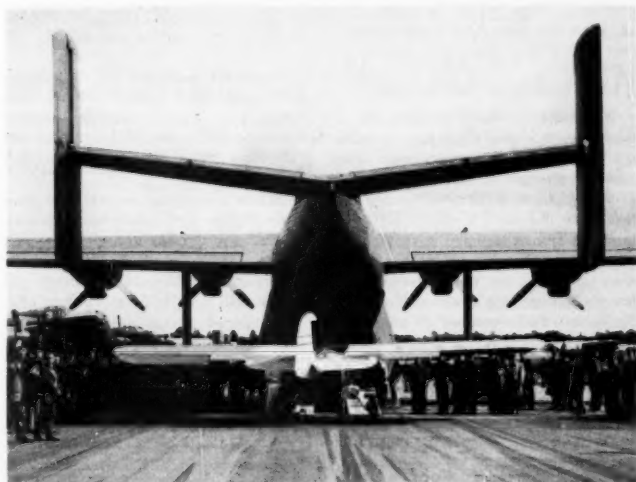
porates several improvements as will be evidenced in the following paragraphs.

The Mark 2 version of the civil aircraft will be fitted with Bristol Centaurus 171 Engines (2,940 hp.) and the design gross weight will be raised from 105,000 lb. of the Mark 1 to 127,000 lb. This will allow an appreciable increase both in range (or payload) and cruising speed, with a corresponding reduction in operating costs per ton mile. The new aircraft will be substantially similar to the GAL 60 except that the rear fuselage and loading

ramp will be replaced by a tubular tail boom above the freight compartment and "clampsell" type loading doors.

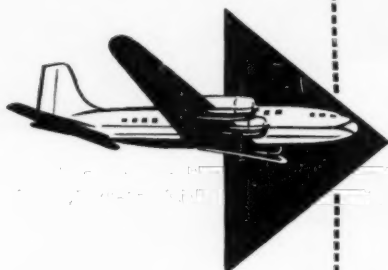
The revision of the rear fuselage results in small reductions in weight and drag and confers an advantage when loading off the platform of a truck and in addition provision can be made for the carriage of passengers (19) inside the tail boom. The Mark 1 was designed with the very moderate wing loading of 36 lb. per sq. ft. and was intended particularly for short range

(Continued on Page 27)



Big and small, airfreighters come in all sizes, as can readily be seen by the huge *Universal Freighter* and Auster's new B4. As a matter of fact, these two planes are distinctly related. Not only do they both fly freight but they both are powered by the same type of engine.

A Guide to Air Shipping



Via

THE PORT OF NEW YORK

PARALLELING the growth of the air shipping industry has come an increasing number of inquiries for specific information regarding the procedure of air shipping to and through the New York/New Jersey port. As a result of all these inquiries, mainly from shippers and traffic managers, the Port of New York Authority has evolved a guide which contains a compilation of general information designed to assist shippers in expediting their shipments.

Considering the importance and practical use this guide can have in expediting shipments and in clarifying particular points, AIR TRANSPORTATION has received permission to reprint this guide. However, only Section One of this pamphlet is being herein reprinted. Section Two contains distances between the principal cities of the world, domestic air parcel post rates, air shipping rates, etc., which are ordinarily found within the pages of AIR TRANSPORTATION, therefore the necessity of reprinting them here is eliminated.

A. Comparative Cost Analysis

While the air carriage rates are almost always higher than surface rates, the differentials in other costs often make it cheaper to ship by air. One of the greatest differentials occurs in insurance charges. Reduced pilferage loss and transit damage have made it possible for the airlines to offer insurance coverage at rates substantially lower than surface insurance charges. These fees rarely exceed 25 cents per 100 dollar valuation for general cargo, while valuable cargo rates are slightly lower. As only light packing is required for air shipment, export crating and packaging costs can be greatly reduced, and the gross weight shipped is less.

Any analysis of air and shipping costs should show that all forms of drayage, warehousing and wharfage

charges are negligible for air shipment as compared to surface. Furthermore, there is an important saving in interest charges on money tied up while the shipment waits in a warehouse or is in transit.

While a comparative analysis shows only dollar and cents savings, many other advantages are derived from speed. If it should be found that a premium must be paid for shipping by air, it will usually be more than offset by reduced inventories, fewer insurance claims, and improved service. It is well to remember that most manufactured products have been shipped by air. Heavy commodities such as furniture, refrigerators, radios and auto parts, as well as lighter items like cigarettes, precision instruments and drugs, now comprise routine shipments.

Since the overall shipping cost is composed of so many variables, it is

impossible to lay down a rule-of-thumb for selecting the most favorable method of shipping. Not only is the value of the commodity to be shipped an important factor in comparing costs, but the origin and destination of the international shipment also may have a strong influence. If these are inland points, surface shipping would involve two extra transfers at ports of embarkation and debarkation.

If the completion of this comparative analysis should indicate that your commodity is one which could move regularly in volume provided a specific commodity rate were established, it is suggested that your local airline cargo manager be consulted. Perhaps the carriers have overlooked the potentials of your commodity when establishing specific commodity rates.

B. Selection of Service

If it has been determined that the shipment is to be moved at least part of the way by air, the following points of information may be helpful in determining the routing of your shipment via The Port of New York:

1. REA Air and Rail

The Railway Express Agency provides a door-to-door service for shipping by air or rail; therefore, no

(Continued on Page 32)

FLY
YOUR
SHIPMENTS



EXPAND
YOUR
MARKET

VOL. 27

JANUARY, 1952

NO. 1

FTL EXPANDS SERVICE

Furniture Payload Flown

GRIFITH, N.S.W.—If there are still some skeptics around who think that cargo-planes can only carry small shipments, the load of a Bristol Freighter, flown here lately will dispel all doubts on that score. Into the Australian National Airways airship went seven lounge suites, four bedroom suites, three china cabinets, three writing cabinets, three bookcases, six occasional tables, 12 chairs, 12 beds and wire mattresses, 12 carpets, 120 floor rugs, 10 rolls of line. All this, airfreighted in one load, went to a local furniture shop here and sold without any additional cost to the customers.

Embargo to Orient Lifted

NEW YORK—KLM's embargo on freight service to the Near, Middle and Far East has been lifted and service resumed. Schedules for KLM Royal Dutch Airlines show six flights per week via Amsterdam terminating at Jakarta in the Republic of Indonesia with service extended to Cairo, Beirut, Damascus, Basra, Baghdad, Karachi, Dhahran, Calcutta, Bangkok and Singapore. In addition to these, a regular C-54 freighter service is also flown to Bangkok.

DC-6As Fly Record Haul; Slick to Revamp System

BURBANK—Not only has Slick Airways airlifted a record total of 6,656,985 tons miles of revenue freight for October, but Slick is also actively consolidating and streamlining certain of its departments throughout its nationwide system to insure greater economy for the nation's shippers. The above total, officials say, comprises the greatest amount of air freight ever flown by a domestic airline during a one month period. Slick's new DC-6As were considered responsible in part for this record haul.

Early in the year, Slick Airways moved its general headquarters to this city and has been carefully analyzing its systems and procedures in order to keep operating costs at a minimum, even in lieu of the general increase in operations. Now that the studies have been completed, new systems are being introduced. Efforts are being made to keep air shipping rates low.

With October as a standard, Slick expects to break all previous records made in air cargo gains.

Air Cargo Hits New High As Pan Am Lifts 53 Tons In 24 Hours From Miami

MIAMI—In one 24 hour period, air cargo from the airport here destined for Latin America hit a new high. Exactly 107,353 pounds of revenue freight were lifted by Pan American World Airways and flown to their various destinations south of the border. This figure exceeded the previous 24 hour record set in November, 1950, by 10,386 pounds.

This one-day movement, official sources say, highlights the biggest Clipper cargo year in history at this city.

Part of this vast flood of shipments consisted of two million cigarettes for Venezuela and two Clipper loads—50 units in all—of refrigerators, one consigned to Colombia, the other to Cuba. Other items were: 100 television sets for Havana; 25 cash registers and some textiles for Colombia; power shovel parts sent to Rio de Janeiro; a soda fountain to St. Croix in the Virgin Islands; 300 pounds of false teeth to Sao Paulo, Brazil, and cases of shoes to Haiti and machine and boat parts to Panama.

However, the greater part of the cargo consisted of general merchandise for Latin American merchants who are stocking up for the Christmas trade.

UN Documents Fly to Paris

NEW YORK—Five tons of important documents from the United Nations were flown to Paris recently aboard a chartered BOAC Constellation. The entire shipment consisted of 32 packages and was the nucleus of a net consignment amounting to 13,200 pounds. The remaining 3,200 pounds were flown on British Overseas Airways Corporation's regular London passenger service in time for the opening of the UN General Assembly.

PAL Makes Pact With RR

NEW YORK—For better integration of services to the shipper, Philippine Air Lines has entered into an agreement with the New York, New Haven & Hartford Railroad whereby the rail carrier will accept the airline's exchange orders. These will be honored at the railroad's Grand Central ticket office here. Pullman accommodation for passengers will also be honored, according to this arrangement.

Increase in Cargo Traffic Starts Vast Improvements

OAKLAND—Expansion of both service and equipment is now in progress due to substantial increases in airfreight traffic in the East Bay Area, claim officials of the Flying Tiger Line. Plans currently underway at the Municipal Airport in this city call for the construction of a new 4,000 square foot freight station, the doubling of the traffic staff, establishment of direct truck service for airport pick-up and delivery, and considerable additional service improvements, all within a short space of time.

Also on order are seven new DC-6As, which will raise this carrier's total to 44 cargo planes, allow for faster service to and from the Flying Tiger's eastern terminals and substantially increase the cargo capacity of the entire line.

Within the past seven months, airfreight traffic for the Flying Tiger Line at this airport has shown an average monthly gain over last year of 94%. October traffic alone showed an improvement of 100%. A direct result of this increase has been for the Flying Tigers to begin direct service to this city by eliminating a transfer at San Francisco. Oakland has also been made an independent station on the system, which means that it is considered self-sufficient in regards to revenue versus cost of operation. This too was due to the growth of airfreight traffic in this area.

More Improvements

Other developments include the installation of direct teletype service that links this airport station with all other terminals on the Tiger system, and the inauguration of a customer service bureau. These improvements mean that shippers now can have immediate assistance on such questions as the location of their freight on the airline as well as the expected arrival times, rates and traffic connections.

As for the increases themselves, officials state that these consist primarily of auto parts, industrial machinery, machine parts, human remains, drugs and business machines. These increases indicate that the East Bay Area will be one of the major industrial traffic sources on the Tiger system within the next few years. The Flying Tiger Line plans to take advantage of all cargo increases, as these improvements and similar improvements going on at San Francisco show.

Liftmasters Fly Cargo Now

NEW YORK—DC-6As, newest of the post-war cargo giants and largest commercial freight plane, is now in operation. Known as the *Liftmaster*, this product from the Douglas Aircraft Corporation, is actually an improved and enlarged version of the DC-6, and it can lift twice as much cargo and fly 100 miles an hour faster than the C-54.

At present, Slick Airlines is the only carrier using the *Liftmaster*. Two have been in successful operation since the latter part of 1951, and a third has been flying since December. Seven DC-6As have been ordered by the Flying Tiger Line, but these will not be flying until 1953. With the nation's two biggest all freight airlines buying Liftmasters, the DC-6A has apparently found a secure place in the air cargo industry.

Loadair Unveiled in SA

BARRANQUILLA, COLOMBIA—Bringing cargo planes to and away from fixed docks has always been a problem until the invention of a device called Loadair came into use. Displayed and fully demonstrated under actual operating conditions for the first time at Soledad Airport here, it proved its utility by moving planes loaded with cargo up to a fixed dock to and completely safe handling. Cargo planes were also loaded and moved from the dock via Loadair.

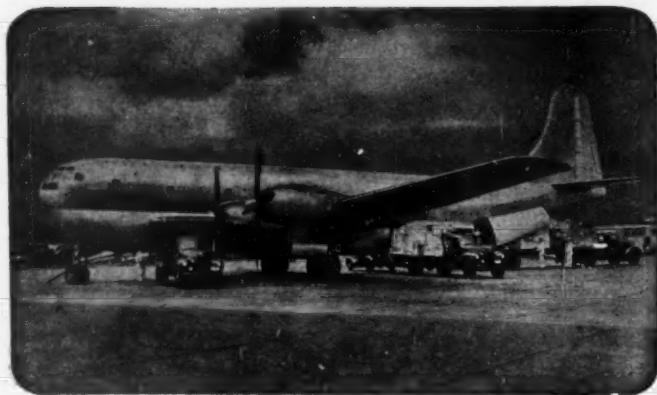
Not only is this mechanical device good for cargo, but it can also be used for passengers with the same degree of safety. It is also said to assure large reductions in the cost of airport construction as well as in capital equipment cost for the airlines.

Baby Boxcar Proves Asset

LONDON—Great Britain's baby boxcar, the Auster B4, proved to be worth its weight in gold when on trial with the British army recently during maneuvers. The B4, similar in appearance to our Piper Cubs, can be used as either an airgoing ambulance or a small cargo plane. Its payload for maximum range is 550 pounds, and its range is 300 miles. Cruising speed for this baby boxcar is a good 100 miles per hour plus.

The Auster B4 has a usable length of 13 feet for cargo. However, its rear doors, which facilitate loading, can be removed for longer cargo without causing any inconvenience to the pilot. Sample freighter loads used by the freighter so far have been blood plasma for 80 men, 11 miles of telephone cable, 10,000 rounds of ammunition, one full day's rations for 120 men, 80 rifles. Although these are military supplies, they can easily be replaced by light machine parts, bolts of textiles, important plans and documents, or similar items that the businessman might want transported without delay from one plant to another, or from one state to the next. For a photo of the Auster B4, see page 9.

Air Cargo Insurance



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Electronic System Safeguards Planes

MINNEAPOLIS—Just as the air cargo industry got its greatest push during the last war, new safety devices now designed principally for fighters and bombers will eventually find their way into cargo transports. One of the latest inventions devised to safeguard cargo—bombs now, refrigerators later—is the electronic remote-positioning development. Weighing less than the usual pulley-and-cable systems in large planes, this device solves the problem of electronically positioning remote devices such as the throttle valve of the jet engine on a B-36. Other complex equipment found on high-speed jet fighters can also be quickly located before serious trouble starts.

This new device, or electronic system, is expected to form an integral part of the control equipment on large flexible-wing aircraft, according to John V. Sigford, chief aeronautical engineer for the Minneapolis-Honeywell Regulator Company. Sigford pointed out that on a B-36, the jet engines are some 100 feet from the fuselage of the plane. Structural flexibility of the wing creates a problem in operating the cable system over this distance, a problem further complicated by the weight of the cable system itself. However, the electronic system, weighing only a few pounds and needing only light wire for operation, is more reliable, giving the pilot almost fingertip control. In the event of a short or open circuit, the electronic system can maintain the throttles of the jet engines in position and warn the pilot of his danger.

"Automatic controls," Sigford stated, "are the answer to relieving the pilot of the complexities of flying ultra-modern planes, and to reducing the pilot's job to something that is safely within human capabilities."

With the invention of such devices as the electronic system, air transportation has become the safest means for getting cargo where it has to go.

Cargo Handling Principles Taught to Men from MATS

WASHINGTON, D. C.—Although the air cargo industry got its biggest push during the last war, commercial application of air cargo has been developed to a greater degree by civilian rather than military forces. The result of this is now that air traffic officers of the Military Air Transport Service are studying traffic and cargo handling problems by working with the civilian airlines.

Personnel from four of our leading airlines are now actively engaged in giving on-the-job training to these men from MATS. The four civilian airlines involved are Trans World Airways, the Flying Tigers Line, Slick Airways and Pan American World Airways.

The entire course of instruction lasts only three weeks, and the students—MATS officers—are assigned on a temporary duty basis, either from MATS Atlantic or Continental divisions in the United States.

Breakdown of tutorage responsibilities is as follows: TWA handles general traffic operations, including passenger, cargo, tower and runway problems. Cargo handling, in both theory and practice is left to Pan American at Miami, Slick at Newark, and FTL at Burbank, California.

Although civilian agencies are teaching the military, cargo principles are universal and a beneficial exchange of ideas is expected to take place while these classes are in progress.

Midet Wins CAB Decision

WASHINGTON, D. C.—Midet Aviation Corporation has been granted a temporary three year certificate of public convenience and necessity by the Civil Aeronautics Board authorizing the transportation of persons and property from Miami and West Palm Beach to Grand Bahama Island in the British West Indies.

Applications from Imperial Airways, Mackey Air Transport, Resort Airlines, National Airlines, Eastern Air Lines and Pan American World Airways to fly this route were turned down by the CAB, which based its verdict on the past performances of Midet over this area. Midet had been flying this route for more than a decade in conformance with the Civil Aeronautics Act and regulations of the CAB and has demonstrated its fitness to continue these operations.

Device Aids Pilots, Shippers Can Mean Savings on Shipments

WHITE PLAINS—Where it was often necessary for a pilot to calculate the gross weight of his plane and then determine the proper airspeed for landing, a new, automatic indicator does the work for him. A development of the Safe Flight Instrument Corporation, this indicator permits the pilot to bring his plane in at the best speed without reference to his cockpit instruments.

Taking into consideration the gross

weight of the airplane, power setting, flap configuration and other factors affecting stalling speed, the indicator automatically warns the pilot to bring the plane in at its resultant minimum approach speed. Since payload and fuel load vary considerably, making for variable gross weight conditions on landings, the pilot usually adds more speed to account for increased gross. Excessive speed, however, is injurious to aircraft. The new indicator will help greatly reducing repair costs, savings of which might be passed down to the shipper of air freight.

KLM Cargo Hits High Peak

NEW YORK—"Indications," stated M.E.A.L. deJong, Commercial Manager of KLM Royal Dutch Airlines, "are that U. S. shippers are becoming virtually aware of the importance of all freight service." As proof of this, deJong noted that from July to September, over 1,000,000 pounds of freight was shipped via KLM to every important commercial center in Europe, the Near and Far East.

Due to this increased activity, deJong added, this carrier's all-cargo flights left New York for Amsterdam every third day during July and August, and a freighter departed every other day during September.

Pigs Airshipped to Italy

CHICAGO—Fourteen pigs, America's finest breed of stock, recently moved from the farm lands of Illinois and Indiana to Milan, Italy. Each of the pigs traveled in a specially constructed crate equipped for feeding purposes; the combined weight of the pigs came to 3,100 pounds.

The handling of this livestock shipment took place at the Air Express International Agency's office in this city, where the pigs' shipping papers were prepared and their health certificates checked. From here they moved via the Flying Tiger Line to Newark Airport, from there to Idlewild and from Idlewild airlifted, again by the Flying Tigers, to their final destination, where they arrived none the worse.



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Australian Breeders Favor Air As Suitable for Shipping Sheep

ADELAIDE—In an experimental flight held recently, 134 sheep were air shipped from Kangaroo Island to this city. With the results of the experiment so successful, leading sheep breeders feel this may lead to the introduction of a regular air service to carry the island's sheep to the Australian mainland. The plane in use was a Bristol Freighter belonging to Australian National Airways.

The idea of air lifting sheep came originally from the success of the Air Beef venture. Although sheep are constitutionally more delicate than cattle, it was found that flying did nothing to injure or frighten them. The sheep arrived in a calm mood. On the return flight, 22 stud rams, farm machinery, a tractor and general merchandise comprised the cargo.

It was also discovered, as a result of this experiment, that airborne sheep arrived at their destination in far better condition than those that go by sea. Travelling by sea, breeders know, means holding the sheep aboard ship four days whereas by air they can be dispatched from Kangaroo Island one day before the market opens.

W. B. Kelly, of Kingscote, whose sheep figured in the air experiment, said, "It looks as though it would pay us to send sheep regularly by air from Kangaroo Island. As sucker lambs lose more condition than sheep when sent by sea on Saturdays and 'yarded' until the following Wednesday's market, the airlift should be an even more paying proposition in their case."

Time Delivery Sped by Air

MIAMI—Both a new publication setup and a streamlined distribution schedule has been worked out by Pan American World Airways whereby Latin American readers of Time can receive their copies more readily than was before thought possible.

One phase of the speedup is the printing of the magazine in Havana instead of New York; the other is the speedup of delivery flights by Pan Am and its affiliates from Cuba to other Latin American countries. Photographic film of the magazine pages are flown to Havana every Tuesday. Plates are then made and the magazine is printed on Wednesdays by photo offset. After that it is up to the airline.

Thousands of copies of the weekly are flown every Wednesday night for distribution the next day, which is the same day the magazine is distributed in New York. Usually, the cargo weighs about 8,000 pounds, and is flown to distribution points at Miami, Panama and Camaguey, Cuba.

AIR FREIGHT FORWARDERS

ACME AIR CARGO, INC., has signed an interline traffic agreement with U. S. Airlines, certificated all-freight carrier. The contract signed by both the forwarder and the airline will permit shippers on the carrier's route along the East coast to ship merchandise on one airway-bill to any point outside the United States serviced by Acme Air Cargo.

Air Express International Agency, Inc., announced that its new International Tariff No. 3 is currently available for distribution. This tariff contains extracts and revisions from the official International Air Cargo Tariff No. 1, C.A.B. No. 5, issued January, 1951. No. 3 is especially designed to facilitate discovery of rate information of particular interest to the shipper. Information such as general and specific commodity rates, minimum charges, valuation charges, insurance rates, destinations where collect service is available are all included together with a list of AEIA's offices throughout the United States where shipments may be consigned. Tariff No. 3 will be sent upon request to all interested persons writing this firm at 44 Whitehall Street, New York City.

Emery Air Freight Corp. has promoted several of its members recently. Among these were Roy B. Linn, now district manager of Emery's new Southwestern District; Peter J. Byrne, raised to Linn's former position; E. J. Sweeney, assistant manager in Chicago; John R. Whittemore, now district manager for the entire Baltimore area; and J. J. Langan, manager of the St. Louis office. These and other promotions were a part of this concern's nationwide expansion program during which 13 new branch offices were opened and 74 promotions took place.

United Forwarders Service has established the following branch offices, approved by IATA and the various airlines concerned: in Miami, at 1611 Congress Building; in Bogota, Colombia, at Apartado Aero 4068, Edificio Jaramillo, Carr. 9 No. 13-33.

LA-Guatemala Non-Stop

LOS ANGELES—Central America and the United States Pacific Coast have been joined for the first time by direct air service. Pan American World Airways has instituted service over these areas—the only major geographical areas of the Western Hemisphere not previously connected by direct air service—the early part of December.

Where the run from this city to Guatemala City had been flown in twelve and one half hours, it is now done non-stop in eight and one half hours. From there to Panama City now takes only three and one half hours as contrasted with the previous six. Thus the entire trip from Los Angeles to Panama will require no more than 13 hours, with no change of plane, including an hour's stop in Guatemala City.

Two round trip Constellation flights are operated weekly over the route, the LA-Guatemala segment of which is one of the longest granted to an airline by the Civil Aeronautics Board in recent years.

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Protest CAB Decision

ANCHORAGE, ALASKA—In a letter recently sent to President Truman, Amos E. Heacock, president of Aircotech Transport Associates, Inc., has protested the Civil Aeronautics Board's decision ordering this non-scheduled carrier to cease operations. Inasmuch as Aircotech Transport Associates was the largest remaining nonscheduled serving the territory, various other agencies have also voiced their disapproval. Among these were, according to Heacock, the Legislature of Alaska, the governor of Alaska, Chambers of Commerce, fraternal organizations, labor organizations, and the national Veterans of Foreign Wars. Inasmuch as this carrier was responsible for hauling the greatest amount of freight into Alaska, the press and merchants of this territory have also protested the grounding of ATA.

One of the results of this decision, it has been reported, will be for the independent airlines to urge the vast expansion of non-subsidized air coach and air cargo services and the movement of all first class mail at air freight rates.

Jet Engines Move as Cargo

WESTOVER AIR BASE—Jet engines for the air forces' F-84 fighter squadrons have been flown as cargo to Germany. The engines were flown by Seaboard and Western. The first shipment consisted of three engines set aboard a DC-4, each engine weighing 4,100 pounds.

UAL Rule Aid in Shipping

CHICAGO—In a spirit of friendly co-operation, United Air Lines has issued a brief warning for shippers of perishable items to be air lifted during the winter months. Shippers were cautioned to use adequate and careful packaging for their items and to mark their packages legibly and with the proper stickers indicating the perishable nature of the goods being sent.

On its own part, UAL intends to take all the necessary precautions that will guard against the effects of winter weather. Adherence to this easy program will offer greater satisfaction for the shipper and to the carrier as well.

BOAC Takes Over GAL

NEW YORK—To provide a more comprehensive service for fast-growing traffic in the Persian Gulf area, British Overseas Airways Corporation has assumed a controlling interest in Gulf Aviation Ltd. Officials claim that this will integrate GAL operations with other airlines in this area. GAL will continue to operate independently as a joint enterprise sponsored by BOAC and local interests.

IATA Lists New Secretary

PARIS—E. S. Pefanis has been transferred from this city to the New York Office of the International Air Transport Association. He has been named Secretary of IATA Branch Office at New York and Secretary of IATA Traffic Conference No. 1, comprising North and South America. Prior to this, Pefanis was Assistant Secretary of IATA Traffic Conference No. 2 here, and before that had been in charge of temporary offices at Cairo and Johannesburg.



Mr. A. Tee Presents FACTS and FIGURES

AMERICAN AIRLINES: Cargo ton miles flown by this carrier amounted to 33.3 million, which is listed as a substantial increase over 1950. The above figure, however, is listed for only the first nine months of 1951 and should not be construed as the figure for the full year. Total revenue earned for express and freight during this period is \$7,962,015, or more than one million dollars above the previous September's figure.

Braniff International Airways: A 38% increase in revenue over this carrier's Latin American routes was shown for September as compared to the same month in 1950. Braniff, as a matter of fact, issued what it considers its best financial report in all of its 23-year history, showing a net profit of \$1,432,000 from January to September, 1951. The earnings listed here almost doubled the figure computed for the first nine months of 1950 and has already exceeded by \$104,000 the complete total earned during 1950. As for cargo (the above figures combine both passenger and cargo totals) airmail, express and freight flown within this period were up 26.15 and 18%, respectively.

British Overseas Airways Corp.: For the first half of 1951, an operating profit of \$2,727,200 was reached and a clear overall profit of \$372,400. This last figure contrasts sharply with the overall deficit of \$6,238,400 recorded for the same period in 1950. In September, revenue exceeded \$8,400,000, which is so far the best traffic month BOAC has experienced.

Chicago and Southern: No less than a

gain of 121% in net income was recorded by this airline. From the first of January to the thirtieth of September, net profits, after taxes, came to \$874,016. C&S is now in its sixteenth year of operation.

Colonial Airlines: Where the first nine months of this carrier's operations in 1950 showed a deficit of \$167,000, the same period in 1951 shows a handsome profit of \$405,000. However, this figure is subject to reduction upon final determination of the amount of mail pay refunds this line may be required to make to the Post Office. Colonial's current assets are listed at \$2,651,000, including cash and government securities amounting to \$1,818,000.

Eastern Air Lines: In its seventeenth year of profitable operation, this carrier boasts net earnings up to September, 1951, of \$3,890,983. The increase which this figure represents over the figure for this same period of the previous year is 123%, or more than two million dollars. Part of this gain can be attributed to the fact that where the airline had showed a deficit for the summer quarter of 1950, this year it earned a profit of \$800,600 in the same period.

Flying Tiger Line: Airfreight and contract operations revenues and earnings rose to new highs with the end of the September quarter. Gross revenues came to \$5,308,000, while net earnings, after taxes, totaled \$610,203. August proved to be the largest business month in the company's history, for revenues during this month

(Continued on Page 17)

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• Scandinavian Airlines System has devised a combination of services that will give the airgoing businessman the best and fullest use of his time both in the air and at his destination. The combination of services will consist of greater facility in making reservations, up-to-the-minute commercial information at the New York office for possible business use abroad, effecting meetings with businessmen overseas who might be interested in the products or services American businessmen have to offer. With this service the American businessman will thus be encouraged to make full use of the carrier's contacts abroad; he will be given access to many industrial firms he might otherwise not have been able to call upon. Trade organizations and commercial groups are also included in this plan. Not only will this aid the flying businessman, but it is also expected to increase the businessman's interest in air freight. As officials of this airline have figured it out, getting more business passengers would, almost as a by-product increase cargo sales considerably.

Calling all hunters . . .

• Complete and accurate information on hunting in the big and famous game areas of the west is supplied in a pocket-size manual distributed by Western Air Lines. Detailed with etchings of hunting equipment, the 12 page guide lists all types of game that may be bagged, season dates, and daily and seasonal possession limits for 13 western states, Alaska, Alberta and British Columbia included. An additional feature is the hunter's game map indicating areas served directly by this carrier. The guide is destined to make the businessman forget his troubles and fly off to his happy hunting grounds.

Airgoing bus service that allows a minimum of travel and a full day's work . . .

• Scheduled to meet the traveling needs of businessmen, a new non-stop round-trip commuter service has been started by California Central Airlines for flights to and from Burbank and San Francisco. According to airline officials, this service has been set up to handle increasing travel by businessmen to the Bay Area. With the new schedule, businessmen can fulfill a full day's work and still get home in time for dinner. The flights only take 88 minutes and so have become popular with the airgoing executive. Sounds like something they can use along the East Coast, too.

One smart businessman tells another . . .

• Even though W. J. Webb, director of sales, Evinrude Motors, Milwaukee, doesn't love any kind of transportation, he does love service, and that accounts for his telling everyone about airfreight. Some time ago he sent a general letter to all Evinrude dealers telling them that if they wanted good service, they had better try airfreight. Now he has sent out a second letter to both the dealers and the airlines, the gist of which is as follows: "We've boosted air freight several times before in Docklines (Evinrude's house organ). While Pioneer Air Lines gets whatever break there is on mention of names, nevertheless every dealer who reads it in every part of the country will get the airfreight idea seed. Anyway, it's not that we love the airlines so much, but we do like the fast service that air freight gives your dealers." What's good for the goose is evidently also good for the gander. *N'est-ce pas?*

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VIPS In Flight

ALFREDO HORNEDO, member of the Cuban Senate and publisher of Cuba's largest daily newspaper, *El Pais*, flew home via Pan American World Airways after a European vacation. Mrs. Hornedo was with him.

From Nassau to Miami via Pan American came the **Most Rev. Leonard Haggerty**, Roman Catholic Bishop of the Bahamas. The reason for his flying visit was to make an extensive tour of the United States.

After dedicating the Swiss center at Rockefeller Plaza, the Swiss delegation, which had flown to New York for the ceremonies, has recently flown home to Switzerland. Among the members of the delegation were **Dr. Armin Meili**, architect who designed the Swiss center, and his daughter **Irene**. They flew home via Swissair, naturally.

Vice president of France, **Georges Bidault** came to New York via Air France, and Mr. and Mrs. **Victor D. Miller, Jr.**, of Mathias & Miller Co., Hagerstown, Md., departed for Europe aboard a KLM plane. Whether for reasons of state, as with M. Bidault, or for reasons of pleasure, as with the two Americans, air transportation is obviously preferred for safe and quick delivery.

When some 50 American Society Travel Agents wanted to get where they were going in a hurry, they also went by air. Pan Am took them on that particular flight. The same carrier also took Mr. and Mrs. **Hal Ley** to London. Ley is the president of Haley Corp.

Swissair has recently flown pretty **Ann Devereau** from New York to Paris. Miss Devereau is the director of the Yugoslav Information Center in New York City.

Chairman of the Nassau Development Board, **Stafford Sands** flew via Pan Am from Nassau to Miami to launch a speaking schedule before tourist organizations throughout the United States.

No matter what they do, air transportation finally gets them all!

Big Loads Fly Little Lift

BERLIN—Three daily loads of approximately 11,000 pounds each comprise the average round trip payload of Silver City Airways freighters flying the new little airlift here. Mostly, the cargo flown consists of single units of electrical equipment, but the loads have been varied sufficiently so that some of the larger German manufacturing firms are reported to be seriously considering solving their own shipping problems by air. Most of the heavy freight consignments flown were needed for sea shipment through Hamburg.

FACTS and FIGURES

(Continued from Page 15)

reached \$1,973,000. However, officials feel that even this figure may be exceeded, since October revenues in some contract operations flew to new heights, and air-freight traffic in October was the second largest in the company's history. The December quarter is generally the Flying Tigers' largest business period. On the whole, airfreight traffic for the year ran 55% above 1950.

Frontier Airlines: During September, this carrier showed a steady progress in all phases of air transportation. In that month, 11,038 ton miles of mail were flown, airfreight increased 69% (or 27,166 ton miles) and air express improved 13% (or 6,238 ton miles).

Northwest Airlines: Reduced plane miles contributed somewhat to a slight reduction in freight ton miles and express ton miles flown. Mail revenue ton miles flown in October totaled 390,107, compared with 365,575 in September and 416,142 in October of the previous year.

Pan American World Airways: For the first 10 months of 1951, this carrier boasts a new world record in international air cargo shipments. From January first to October thirty-first, incoming and outgoing shipments handled through Miami came to 16,748,202 pounds, fully 4,171,252 pounds more than the recorded total for the same period of the previous year. This unusual flood of cargo shipments indicates that the Pan Am flew an average of 1,674,822 pounds a month through its Miami gateway.

Philippine Air Line: A vast increase of 375% for the first nine months of 1951 over the same period in 1950, has been recorded. Systemwide operations are reported to show an uninterrupted net profit in each succeeding month of operation since the second quarter of 1950. Of the \$1,211,030.50 gained during this nine month period, \$405,624 was earned from non-operational income, including the sale of aircraft.

Seaboard and Western Airlines: Increases seem to come in multiple numbers. An overall airfreight traffic increase has been listed by this carrier of 110% for the third quarter of 1951. From July through September, 6,405,300 ton miles of freight were flown by S&W as an irregular commercial carrier over the North Atlantic and as a prime contractor on the Pacific airlift. On the North Atlantic routes, an increase of 146% was listed for this period over the same period last year.

Trans World Airlines: Cargo ton miles on the TWA system were increased by 23.7% for the first nine months of 1951 over the same period in 1950. Of the 33,601,000 scheduled cargo ton miles flown, 24,855,000 were on TWA's United States routes.

United Air Lines: Mail ton miles were up 47% for the highest October figure since 1945, but express ton miles were down 14% from 1950, and freight ton miles were down 34%. Nevertheless, improvement was reported in that from September to October, 1951, mail had gone up 8%, express 2%, and freight 7%.

Horses Flown From Paris

SAO PAULO—Five prize race horses, valued at \$33,000, were flown from Miami to this city aboard a cargo *Clipper*. The flight aboard this Pan American World Airways cargo plane constituted the last lap of a journey that had originated in Paris, France. The racing mares arrived calm and content with their trip.



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2 Handy little chart which gives air parcel post rates for all eight postal zones in the United States.

3 Speed . . . in *Photo and Fact*, another of the interesting booklets depicting the particular values of air express.

4 24-page catalog in color illustrating the new line of Barrett hand lift trucks. Well illustrated.

5 Pictorial progress during 50 years in the life of the American Box Company, manufacturers of wooden and wire-bound boxes and crates.

6 Sample back number of the *American Import & Export Bulletin*, giving news of developments in the foreign trade industry. Covers Customs, Commerce, Agriculture, Treasury, and State Departments thoroughly. Reports on changes in laws, rules, regulations, etc.

7 Illustrated and fully described in a six-page folder are facts for the shipper and packer interested in strapping, seals, tensioners, sealers and accessories. The products are for handling all types of packages, bales, boxes, pallets.

8 Bulletin 5191, illustrates and briefly describes the principal units in an expanded line of industrial trucks and tractors. The complete line is graphically presented in this attractive, four-page folder.

9 Here's a handy gadget being distributed by a prominent freight forwarding firm. It's a combination key ring and auto license holder which fits neatly into your pocket.

10 Both entertaining and educational, a 20-minute color and sound film is available to clubs, schools, business groups and television stations. It shows how business airplanes help industrial leaders save time. Highly informative.

11 A new eight-page specification booklet listing the advantages of the new fork lift trucks. Dimension drawings show their maneuverability, detailed specifications allow comparisons with other trucks. Complete in every detail.

12 *How To Help Your Post Office Help You*, a new booklet, copiously illustrated and designed to help accelerate postal service whenever necessary. It will prove timely and valuable to parcel post shippers as well as to users of regular letter mail.

13 For those whose trucks are a vital part of their business, a new, large, 16-page booklet is ready to help keep them rolling. Fifty-one illustrations with explanatory text will show you how to prevent truck failures and save on overhaul expenses.

14 Literature describing a new-type gummed tape dispenser which is operated like a telephone dial, measuring and cutting the tape accurately while moistening it.

16 *Units of Weight and Measure. Definitions, and Tables of Equiva-*

lents—a valuable 68-page book for all shippers. Handsomely put up with leatherette cover.

18 An attractive and valuable wall chart in color, showing the proper procedures in storing gummed tape, the use of automatic dispensers, and the application of gummed tape. Should be on the walls of all shipping departments. Illustrations tell the story in a glance.

19 Complete information concerning five new fork lift trucks is now available for all shippers interested in improving their line of trucks with an eye toward speed, efficiency and maneuverability.

20 A complete directory of all Railway Express Agency offices which provide air express service. Offices are listed alphabetically to facilitate detection.

21 If you're a shipper you'll like this gadget. It's a dial-type estimator which places air express rates at your fingertips. How many does your office require?

22 General information and air freight rates of British Overseas Airways Corporation. Includes such information as charges for Customs clearance formalities in the United Kingdom, transshipment charges, prohibited articles, etc.

23 1951-52 edition of the *Missouri Airport Directory*. Contains an aerial photograph of every airport in the state open to public use, as well as pertinent information. 100 pages.

24 A job study showing how an Albany manufacturer of cleaning products increased plant capacity 400% with a carefully planned integrated handling system.

25 *Off the Cuff*, an informational magazine produced by a leading manufacturer of materials handling equipment. Well illustrated.

26 Descriptive brochure on the brand new book, *Boxcars in the Sky*, which tells the thrilling story of commercial and military air cargo, from A to Z. This volume is the first of its kind published anywhere.

27 *Travelers' Facts About South America*—for the green visitor to the southern continent who requires all types of information concerning the various

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● Inquire about Panagra's low cargo rates . . . they're lower than you may think! Daily cargo service via 300-mile-an-hour DC-6's . . . only overnight from Miami to Buenos Aires. Speed large or small shipments to Panama*, Colombia, Ecuador, Peru, Bolivia, Brazil, Chile, Argentina. Call Panagra's U. S. Sales Agents, Pan American World Airways, your Freight Forwarder or write Cargo Dept., Panagra, Chrysler Bldg., New York 17.

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countries and how to prepare for his trip. The business air traveler will find this 28-page booklet valuable.

28 *Your Foreign Shipping Handbook*, a descriptive booklet, in color, issued by the Foreign Traffic Department of American Express. Introduces in graphic form the various services of the company's international shipping setup.

29 Here's a handy pocket-size weight converter, which will translate kilograms into pounds, and pounds into kilograms. Don't forget that some countries figure their weight in kilos. You'll make use of this.

30 *Gourmet Guide to Good Living in South America*—a 55-page booklet which presents the business air traveler with all the necessary know-how relating to foods, restaurants, hotels, clubs, etc.

31 *What to Expect from Wirebonds*—an attractive booklet which presents the construction principles of wire-bound boxes and crates. Includes 24 case studies.

32 *The Picture Book for Parcel Post Shippers*—an illustrated booklet explaining economies in metered parcels.

33 TWA's *Air Freight Fact File*, which includes route map, air freight office phones, rates, etc.

34 Consular Documentary Requirements and Charges, as prepared by one of the leading air freight forwarding firms. Valuable for international shippers.

35 Latest issue of *Industrial Review* which highlights the advantages gained through the use of a certain specialized packing tape.

36 Latest issue of a valuable magazine which includes many useful tips on the use of steel strapping in packaging shipments. Well illustrated.

37 A chart showing step-by-step instructions for sealing Vs and W cartons with tape to meet Government specifications. Ten steps are depicted. Includes sealing a carton's innerliner and outer seams, and covering and protecting carton labels. A handy reference.

39 *Peggy and Mado*, an unusual comic-type booklet which does a

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terrific job explaining how a four-week vacation can be spent in France.

41 Latest issue of *Handling Materials Illustrated* which offers actual case histories to those who are engaged in the handling of various types of shipments.

43 Here's the very latest issue of the New York State Airport Map and Directory. This is a revision of the last map offered in these columns.

44 Just about everything the air freight shipper has to know about tariffs. This new, revised list is designed to simplify the finding of facts necessary for shipping. Approved by the CAB.

Ferry Season Opens Early

SOUTHAMPTON—During the season that has recently ended, Silver City Airways' air ferry service carried 13,000 cars over the English Channel. This service, which proved popular with tourists, will be starting earlier than previously. Reasons for making a start during the winter months, officials claim, is to make this service known to the public before the normal ferry season opens. Thus the early start will develop greater air freight traffic between this port and Cherbourg within the next few months.

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NEW EQUIPMENT

FOR THE *Shipper & Carrier*

► **Multistamp Company:** One of the most economical and practical means yet found for marking and addressing tags and labels, this firm's Hand Stamp Stencil Duplicator can also mark directly on boxes, cartons and packages. For fast, accurate copies, it now is necessary merely to type, write, trace or draw on the stencil, affix it to the duplicator and print as many as 1,000 copies from the one stencil and the one inking. This rocker-



type Multistamp duplicator combines the mechanical advantages of the rubber stamp—making clear copies on any flat or cylindrical porous surface—and the rotary-type duplicating machine. Ink flow is uniform throughout the printing surface, assuring thereby sharp reproduction of all 1,000 copies. Pre-cut or prepared stencils

are now available for use besides the regular stencils. Ink pads are also replaceable. Whereby borders and complete "To" and "From" forms are pre-cut into the stencil, thus requiring only the information for individual orders to be filled in before printing. Further information concerning the Hand Stamp Stencil Duplicator is obtainable by writing to The Multistamp Company, Norfolk, Va.

► **Hyster Company:** Two new lift truck attachments for handling drums have been developed, the Model '20' two-drum han-



dling arms, and the Model '40' four-drum handling arms with replaceable pads. The arms feature a specially-designed steel-backed rubber pad which has both a mechanical and vulcanized bond to the steel backing. The Model '20' has an average rated load of 1,990 pounds while the Model '40' has an average rated load of 2,800 pounds. No special tools are necessary to remove and replace the pads themselves, or to interchange along the arm to distribute the wear. Both the two-drum handling arms and the four-drum handling arms for the Model '40' are currently available at no increase in prices.

Hyster has also developed a new revolving paper roll grab attachment to handle

large types of newsprint and similar loads ranging in diameter from 22 to 44 inches. This new attachment is available for the Model '40' Lift Truck. Besides being able to handle rolls of such large diameter, it can handle both slick and regular newsprint. An automatic check valve maintains the applied clamping pressure until the load is released by the operator, thereby permitting greater safety handling by the operator, and the need of removing the base unit from the truck is eliminated because a removable bumper guard provides more convenient access for maintenance and servicing.

► **Baker-Rauland Company:** A power winch mounted in the battery compartment of one of this company's JOM series fork trucks (7,000, 8,000 and 10,000 pound capacities) can turn the trucks into die handling machines without altering their tiering and hauling efficiency. All the parts of the winch except its reels and cables are enclosed in the truck's battery compartment. For die pulling, hooks on the winch cables are attached to the die, and power is applied to the winch to pull the die onto the forks. Cables running from the winch to the die are guided over rollers to prevent friction between cable and body surface.

A remote control attachment for fork trucks has also been developed by this firm. The new attachment permits truck operators to control the lifting and lowering action of the forks at a distance from the truck's control panel. Its usefulness comes when operators want to get at seldom used stock stored in inaccessible bins. With this attachment, truck operators can use pallets with guard rails as work platforms, standing on the pallets as they raise or lower themselves. Lifting and lowering is controlled by the small remote control unit clamps over the tie bar on the truck's inner upright. Reels holding the remote control cable hold it under tension to prevent kinks. The reels contain enough cable to allow the unit to reach the truck's standard lift limit.

► **Raymond Corp.:** The conventional hand pallet, with this firm's new skid adapter, can now lift and handle skid platforms. By furnishing a hinged superstructure that can be raised out of the way when handling pallets, or lowered into position when handling skid platforms, a single truck can be used for handling both types of equipment.



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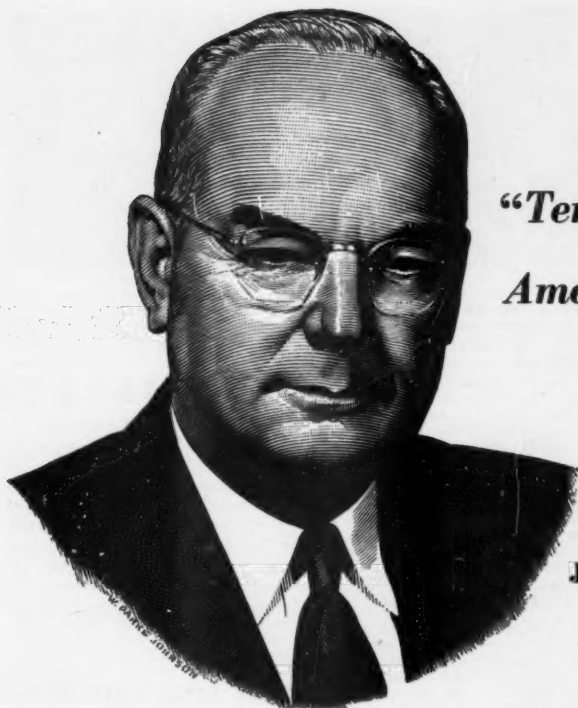
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In ten brief years:

- From 700,000 in 1941 employee participation went to 27,000,000 at the peak of the war.
- Companies with Payroll Savings Plans jumped from 10,000 in 1941 to more than 175,000 during the war.
- Since January 1, 1951, the number of men and women on Payroll Savings has grown from 5,000,000 to 6,200,000.
- On September 30, 1951, individuals held Series E Bonds totaling \$34.6 Billion—more than \$4.6 Billion greater than on V-J Day.
- In the January-September, 1951, period, 33,418,000 \$25 E Bonds were purchased—a gain of 17% over the same period of 1950. 8,966,000 \$50 E Bonds were sold in the first nine months of 1951. \$25 and \$50 denominations are the bonds bought by Payroll Savers.

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AMERICAN AIRLINES: As cargo sales expanded, this carrier created two new managerial positions that were subsequently filled by Frank Beach, manager-cargo traffic, and Thomas J. Harris, manager-cargo sales. The enlargement of the cargo division reflects the increase in AA's cargo capacity and its intensified effort to develop new cargo business.

Avro Canada: Crawford Gordon, Jr., has been elected president and general manager of this firm, relinquishing his post as co-ordinator of production in the Department of Defense Production at Ottawa. Avro Canada, incidentally, is the designer and producer to the RCAF of the CF-100 fighter and Orenda jet engine.

Canadian Pacific Air Lines: To the president of this airline has come a new assistant in the form of Ian A. Gray, who previously had been general superintendent of engineering. Gray is now succeeded by his former assistant, F. M. Francis. Both Gray and Francis are from Vancouver.

Chicago and Southern: The first airline president to be named honorary member of the Cuban Tourist Commission is Sidney A. Stewart. This singular honor was extended to C&S probably because this airline was the first domestic line to extend its routes into the Caribbean and the first to provide four engine service to Cuba.

Northwest Airlines: Matthew F. Tearney has been named special representative in the Air Transport Association military bureau in Seattle. To take up this new post, Tearney will be on temporary leave of absence from NWA as long as his services are required. Ordinarily, Tearney is the senior sales representative for NWA.

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TWA to Use 4-0-4s in '52

WILMINGTON—To Trans World Airlines' fleet of 143 aircraft has been added a twin-engined plane to be used for medium and short haul service by a coast-to-coast trunkline. This was the first of 40 Martin 4-0-4s to be delivered to TWA. The airplane is designed for easy conversion to turbo-prop power that will substantially increase its current speed of 300 miles per hour. The skyliners are expected to go into service the early part of 1952.

Carrier Takes New Office

NEW YORK—U. S. Airlines, which operates scheduled all-freight service daily between this city and Miami, has moved into new general offices here at 500 Fifth Avenue. The carrier's new telephone number is listed as Lackawanna 4-0850. Besides the aforementioned stops, U. S. Airlines also makes additional stops at Baltimore, Atlanta, West Palm Beach and Ft. Lauderdale.

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Totals in Air Cargo Gains

Revenue ton-miles

Carrier	1946	1947	1948	1949	1950	1st Ha 1951
Slick	11,198,594	21,669,651	25,581,493	24,247,012	35,700,800	32,483,892
Flying Tigers	5,793,270	5,788,476	13,399,001	11,942,239	21,435,309	15,126,257
American	10,475,523	11,178,731	21,822,054	31,845,434	35,304,598	17,936,000
United	4,445,080	10,091,734	19,807,208	23,727,149	28,034,278	11,949,710
Eastern	320,450	2,538,880	5,730,243	9,114,101	9,751,213	2,594,778
Capital	572,400	2,433,202	5,199,014	7,450,410	8,586,983	2,568,238
TWA	2,196,688	4,930,493	9,969,732	12,035,978	13,804,122	7,722,000
Total All Carriers	35,002,005	58,421,167	101,538,745	120,362,323	152,617,303	90,380,875

Pan Am Flies Surface Mail

NEW YORK—Due to the recent long-shoremen's strike, a backlog of 1,000 bags of United States surface mail had to be re-dispatched to Miami to be flown to their destinations in Panama and South America. Exactly 40,000 pounds of mail were involved in the shipment, and these were flown on a space available basis by Pan American World Airways to Panama. From this point south to Ecuador, Peru, Bolivia and other countries on South America's West Coast the mail was flown by PAA's affiliate, Pan American-Grace Airways (Panagra).

UAL Expands Cargo Routes

CHICAGO—United Air Lines is providing more fall and winter space and service for regular air shippers and receivers than ever before. In spite of its assistance in the cause of national defense, those flights that had been inaugurated during the summer are now being retained in this carrier's winter schedules, and other routes have been expanded. This increase in normal activity is due to the marked increase in users of air transportation for shipping. Already, United has experienced a record breaking cargo season. This was made possible by the partial delivery of UAL's order for 22 DC-6Bs, which are used as passenger-cargo ships.

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KLM Hires Animal Wardens

NEW YORK—Specially trained animal wardens have been added to the KLM roster of freight specialists. To date, ten animal wardens, or stewards, have been engaged by the Royal Dutch Airlines to act as guardians of the animals while in flight and on the ground. Prior to shipment, all animals are inspected as to health, manner of packing and the wide variety of their needs. The stewards will be aboard all animal and flying zoo shipments. In preparation for their task, the stewards' course of study included initial practical training in zoology at the Walsensar Zoo in Holland.

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Cargo Ramp Saves Time

BURBANK—Air carriers offer shippers more speed in a variety of ways. The latest is Slick Airways' new automatic loading ramp that cuts loading and unloading time in half and reduces labor by one-third. Where previously it had taken five hours to unload and load a DC-6A, actual time for these combined operations now takes two and one-half hours. This time saving now allows the carrier to speed up its schedules and thereby offer faster delivery of cargo.

This ramp can be used either on Slick's DC-6A *Airfreighters* or on its smaller C-46s. Freight is carried up the 50 foot ramp on a rubberized conveyor belt. Pieces that weigh as much as 1,000 pounds can move easily up or down the conveyor belt while ground cargo handlers walk alongside on a walkway provided for that purpose. An experimental model had been used by Slick only at Newark Airport. But so greatly impressed were company officials by the ramp's utility, that Slick plans to provide improved versions of the ramp in its other major terminals soon throughout the country.

Color Film Flies to NY

BUENOS AIRES—More delicate than flowers, 10,000 feet of undeveloped technicolor film were flown from this point for processing in New York. The film, which required special handling, represented the first shooting of a 20th Century Fox film called "The Way of the Gaucho," which is being filmed in Argentina. The film had to be shipped in special ice-packed containers, and Panagra employees were charged with the task of changing the ice periodically and keeping careful watch on temperature changes to avoid spoilage. The film was reported to have arrived in excellent condition.

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(Distances in Statute Miles)

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Atlanta	575	933	960	695	583	368	550	1208	595	1293	286	675	1935	335	610	905	427	747	753	663	520	2172	470	467	1560	2133	2180	542
Baltimore	358	1513	273	603	423	305	1505	398	1750	682	962	2313	792	958	1001	170	1173	90	194	2367	135	731	1558	2451	2341	33	
Boston
Brownsville
Buffalo
Chicago
Cincinnati
Cleveland
Denver
Detroit
El Paso
Jacksonville
Kansas City, Mo.
Los Angeles
Memphis
Miami
Minneapolis
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Portland, Ore.
Richmond
St. Louis
Salt Lake City
San Francisco
Seattle
Washington, D.C.

UNIVERSAL FREIGHTER

(Continued from Page 9)

operations from secondary airfields. Experience has shown that the exceptional take-off and landing performances would permit an increase to 43½ lb. per sq. ft. for the Mark 2 without sacrificing any desirable features, particularly as the power loading would be reduced. Thus the *Universal Freighter Mark 2* will also be able to operate from secondary airfields by virtue of its landing per take-off performance and four-wheeled bogie landing gear.

It will meet all I.C.A.O. performance recommendations. The main feature of this, Britain's largest freighter, is naturally the freight compartment which is described above, but several other items enable the *Universal* to combine capacity with economy and performance with serviceability. For instance, the four-bladed propellers are designed to absorb the full power of the engines in reverse pitch for braking, thus giving the exceptionally short landing run of 230 yards.

The undercarriage is of the fixed, nosewheel type, having a steerable twin-wheeled front unit and four-wheeled bogie main units with hydraulic disk type brakes fitted to all eight main wheels. It is intended that the differential brakes on the main wheels will be used for steering during take-off and landing while the nose wheel steering will be used for taxiing when the flying controls may be locked.

The flight deck is ideally situated above the forward part of the freight compartment where there is ample space for the efficient functioning of the crew. Accommodation is provided for a minimum crew of two or a maximum of four, and access to the flight deck is by means of a ladder from the forward part of the freight compartment, through a hatch in the floor behind the pilots' seats.

Freight Carrying Facilities

The main freight compartment has a level floor 36 feet long and 10 feet wide, with no obstructions. The maximum headroom is 10 feet, but, if required, an additional removable floor can be provided, which divides the freight compartments into two compartments, each 4 feet 9 inches high.

If required by the operator, the freight compartment can be heat insulated and supplied with warm air, the necessary equipment being available as an optional fitment. Lights are provided along the top of the compartment and there is, in addition, a system of floor lighting to illuminate the freight lashings. Windows fitted along both

sides at 40 inch intervals provide day-time illumination.

Access to the freight compartment for servicing personnel and for passengers is provided by a door in the side of the port freight loading door, at the rear of the compartment. Access to the crew stations in flight is by means of a step on to the raised floor of the nose compartment and thence by the pilot's entry ladder.

The floor of the freight compartment has been designed to carry any load within the capacity of the aircraft, without spreader beams. In addition, the surface has been made sufficiently robust to stand the local concentrated loads arising from any type of freight except tractors, etc., with metal spade tracks. These latter will require planks under their tracks to protect the floor surface.

In view of the wear and tear which is anticipated on the floor panels, these are replaceable and interchangeable. They are coated with Phenoglaze walkway finish, which can be reconditioned by spraying when worn. The strength of the floor panels and supporting structure caters for a maximum unit distributed load of 325 lb. per square foot, and a maximum axle load for vehicles of 9,000 pounds.

The floor panels are supported on seven equally spaced channel section members, running lengthwise which besides housing the lashing fittings when they are not in use, carry off surface water which may run off vehicles loaded in wet weather.

The freight floor is inclined downwards about one and a half degrees towards the rear when on the ground, thus allowing the floor channels to drain over the rear threshold. The floor has been made watertight as nearly as possible, but in case of any seepage into the fuselage structure underneath, the bottom skin of the aircraft is provided with drainage holes.

The freight floor is provided with 161 lashing points in 7 longitudinal rows 20 inches apart and all fittings are capable of carrying an ultimate load of 5,000 lb. Forty-eight fully rotatable lashing shackles, which will attach to any of these fittings, are carried in a stowage on the freight compartment side wall. In addition there are three horizontal rows of one ton lashing rings provided along each side wall of the freight compartment.

For the purpose of loading vehicles, twin loading ramps are provided at the rear end of the freight compartment and these may be carried in the aircraft if required. The maximum angle of inclination of the ramps is 18 degrees, and they are of adequate width to allow any known wheeled load to be driven up with safety.

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A loading winch, either operated by hand or electrically from a ground starter trolley is available or an alternative means of freight handling, which can be provided if required, is an overhead gantry (or gantries).

For those who are interested in statistics, the following group is appended. Comparison figures that will show the differences and similarities of the *Universal* with American freighters are not readily available, but the *Universal*, in comparison, can probably hold its own exceedingly well with American models.

Comparison Chart Appears on Page 34

HOW DOES YOUR PACKAGE?

(Continued from Page 5)

vation, packaging, and packing as required under government contracts.

"Preservation, packaging, and packing as called for under government contracts is an engineering process and project as vital to the completion of a contract as the engineering and layout of the commodity which is being manufactured. Similar engineering training, study and application is as necessary to accomplish a good job in this phase of work as it becomes necessary to have the proper background for any engineering assignment. It is indeed unfortunate that in some instances due to the failure of top management of private industry to recognize this fact, we have the result which is the major cause of confusion and failure to perform."

Bearman recognizes the fact that many contractors with a contract to fill

merely step out and endeavor to find someone competent to handle the packaging job.

"But," he pointed out, "the field of transport supplies preservation, packaging, and packing is in its infancy. It was towards the end of the war that we began to develop the techniques which formed the foundation for present methods and processes. This highly specialized field, unfortunately, attracted only a few men who were willing to sacrifice the time and effort necessary to fortify the mind with the study and knowledge needed to correlate a multitude of specifications applicable to the various branches of the Armed Forces.

"Due to this, management has found it difficult to locate qualified personnel; therefore, if industry is to continue the handling of millions of dollars' worth of government transport supply contracts, it would seem to me the most logical step would be the instituting



of a plan designed to equip some key personnel for the handling of this phase of production.

"Equipping key personnel with a knowledge of specifications and their applications is one thing which cannot always be accomplished through a directive of top management. An individual or individuals must be chosen who have the interest and aptitude to dig into the theory and philosophy behind specification requirements. In other words, you must find a specification man who is fully qualified. He has to be born with a desire to study and apply specifications starting with the sub-basement and working up through the slow process over a period of years.

"It is the same reasoning which

would apply to the man desiring to become a lawyer or a doctor or a designing engineer. You do not merely hand out a directive, and all of a sudden have a doctor! A professional man is trained over a period of years and then spends a good portion of time working as an intern or an apprentice, so to speak, and even then practices for the rest of his life!"

"It is true," continued Bearman, "that we do not have the time to put men through such training so as to equip the packaging engineer with the knowledge and background required. Yet it is true that some progress has been made in instruction at the Rossford Arsenal School, and in other government refresher courses being organized which are fine. As stated previously, our work in this highly specialized field is relatively new. Much of the work being done is like blazing a trail in an attempt to set the standards and levels of approach. But, there has to be a starting point some time.

"After all, the packaging industry is handling billions of dollars' worth of the taxpayer's money in the production of critical materials necessary for the defense of the country. All of us, as taxpayers, must recognize the fact that we are stockpiling materials in this country and all over the world in order to build our defenses. These materials may have to stay in storage in this country or in the South Pacific or in the Aleutians, in the Sahara Desert, for a month or a year or five years or ten years. None of us know when these materials will be called upon to go into action. Therefore, it is only good common sense that we must preserve and protect through preservation, packaging, and packing these billions of dollars of material against the ravages of deterioration through corrosion, rust, and physical breakdown."

Mr. Bearman added: "It is indeed an interesting observation to note what wonderful miracles are performed on our production lines. These perform-

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ances are the result of sharp management and keen brains and because of this fact, it is somewhat amazing to see how little attention top management pays to the manufactured item after it leaves the production line. Concern after concern today assigns the engineering project of packaging and packing to a shipping clerk, to go along with his many other duties. In many instances, these shipping clerks or foreman do outstanding jobs; but, in the majority of cases, they do not have the time to get the training or background to engineer such a project. While the job in the majority of cases finally is completed, if the packaging and packing were engineered previous to the job assignment to the shipping department, millions and millions of dollars could be saved in time and material by industry and taxpayers."

Needs of the Industry

To sum up, the impetus for action must start with top management so as to reflect the spirit of everyone all the way down the line. It is indeed enlightening to see how many transport concerns today are at last beginning to institute packaging methods departments. These are steps in the right direction; but, it is only a beginning. The big problem is to make these departments work and not merely to have titles to refer to. Men who have been given the responsibility of heading off methods and quality control divisions should institute day by day studies and refresher reviews in the same manner that a doctor or a dentist keeps himself informed. The general subject of preservation, packaging, and packing is going through constant changes and improvements from day to day. Any man affiliated with the field has to apply and study new methods day in and day out.

"Many times during the course of our work," said Bearman, "we listen to various tirades by contractors and their employees criticizing the requirements of preservation, packaging, and packing as required under government contracts. This criticism is based on one fact, and that is lack of knowledge on the part of the contractor. He is criticizing because he doesn't know what he is supposed to do, and he didn't understand his contract when he affixed his signature to same. I have often wondered how many businessmen buy a piece of property or go into a transaction involving sums of money without getting legal advice. And still, we have contractor after contractor signing contracts and bidding and accepting same without having the least idea of what is required to preserve, package and pack material he is producing.

"There are many contractors who

have lost dollars on contracts due to the requirements of packaging and packing. In plain words, they have signed contracts and have obligated themselves to fulfill certain obligations without knowing the full significance. I can't understand why business men approach government contracts with the idea they can do what they have in mind, and put up an argument against the fulfillment of their obligation. The signing of a government contract is a serious business. It is an obligation to a hundred and fifty million people in the United States.

"If every businessman had the opportunity and time to study merely the preservation, packaging, and packing specifications and requirements he would have a deep appreciation of the spirit and philosophy behind the meaning intended. I have often heard severe criticism leveled at the so-called 'bureaucrats' who write these specifications. This is an unfair charge and is not the result of correct thinking. The more I have the opportunity of working with specifications and applying same, the more respect and admiration I have for the brains which make these specifications possible.

"Good sound logic is not the result of a dreamer! As a taxpayer, I am well satisfied with my dollar return. A good many government specifications have been adopted by industry and have become a standard which has given all of us value received. If it hadn't been for some of our so-called bureaucrats who have written these specifications, industry never would have taken some of the steps which they have not only used for performance on government contracts, but if you please, have adopted in their commercial field of practices.

"About four years ago, our organization set out on a program to equip our profession with the tools and knowledge necessary to function in the field of preservation, packaging, and packing. We decided that it was urgent for us to allocate specific funds for the purpose of building and continuing a specification library. This decision was the starting of an educational program which has continued day by day and is continuing today and will continue indefinitely.

"The correlation of government specifications as they are related to one another requires the day by day study, review and application. Our specification library is as vital to our business as the law books are to a lawyer. As a result of this decision, our offices have become the nucleus for disseminating information and interpretations to prospective government contractors and to contractors performing on a government contract. We recognize the

fact that the vast majority of contractors have not had the opportunity to avail themselves of the information on specifications which we keep available to them; and as a result of this, we feel it our duty and obligation to keep abreast of every latest change or development so we can intelligently serve them."

In closing, Mr. Bearman pointed out a phase of industry which has contributed so much to the success of preserving the finished product coming off the production lines of our various plants. A phase of the packaging industry is devoted to making the materials as required under the rigid standards of government specifications. These materials involve literally hundred of different types, classes, grades, styles, conditions, etc., and to these efforts, the present success in the field of preservation, packaging, and packing has been made possible. These men have provided material necessary to protect electronic equipment, aircraft equipment, automotive equipment, medical equipment, and a multitude of equipment. Stringent government standards have been a challenge to all of us; but as typical of the American spirit, we are coming through with flying colors.

Knowledge and understanding is gained through study and association

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with our fellow men. We have a big job to perform, and we shall accomplish its success; but understanding what our fellow men wish to accomplish can only be done through study and application, as this will lead to the completion of the end result we desire to attain.

OIL, SAND AND AIR CARGO

(Continued from Page 8)

sovereigns were periodically flown to Saudi Arabia in fulfillment of the Saudi Arab Government's request to have its royalty monies in this form.

Thousands of IBM cards wing regularly back to the United States from the Field organization, enabling the comptroller's units at both ends of the line to cooperate on the tremendous inventory problems and auditing needs.

Many of the departments in Arabia, with particular emphasis on Purchasing and Stores, depend on the microfilm records that filter into the Field by air on almost each flight. Actually, this minimizes space that would be required to ship pertinent business records in their original sizes. In this way, paper

work is cut down, much of the red tape of handling various records is eliminated and, generally speaking, operations are expedited.

Short supplies of stationery in the Field have been built up from time to time by air shipment. This has been especially the case with paper stock for Aramco publications which are particularly keen in their registering of employee morale.

Even grass seed and special aids for the Agricultural Program being carried on at Al Kharj and Hofuf, have been



Pumpkin seeds flown in from the United States helped Arab farmers and American experts cultivate this pumpkin patch along the irrigation ditch on an Al Kharj farm in Saudi Arabia.

delivered by air consignment on occasion. American farming experts teaching Arab farmers the know-how of modern, scientific farming at these farm belt sections have sometimes needed implements or materials in a hurry . . . and have gotten them. Since greenery of all kinds in barren Saudi Arabia has the indisputable tendency of lending a feeling of well-being to the desert communities, lawns and shade trees around family housing are constantly being babied and coaxed by employees. The Company does everything possible to lend an encouraging hand and here again seed and soil invigorators are brought in to urge the most from the sandy soil . . . and many times brought in fast, by air.

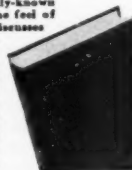
Since Aramco's basic function in Arabia is the finding and producing of oil, the Exploration people who do the actual locating of the oil sources have been supported by air cargo time and time again. Each desert party has been

able to depend on air support in several ways. Delicate instruments like gravity meters, for instance, have certain vulnerabilities that can be coped with only in American factories where they were originally produced. When these instruments go haywire, and they do at times, they must be planed back to the States. Their return to duty can be expected in a short time.

For a long time Exploration posed a real workload for Aramco's air cargo operation. It was between October 1949 and May 1951 that seismograph work was being done in the Persian Gulf, probing the offshore depths for producing possibilities. The progress of this type of exploration depended to a large degree on weather and other uncontrollable natural factors. Aramco set up an office in Dallas, Texas, manned by a team of geo-physicists and commenced to air-ship the seismograph recordings to this office from Arabia. The recordings were then studied, analyzed and planed back by air to the Persian Gulf. The purpose of this long-range operation was simple, as simple as a dollar sign. It had been found that the costly expenditure of importing a geo-physical team to Saudi Arabia and supporting them where they might have actual work only a small part of

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the time (depending on the erratic progress of the exploration teams) could be offset by air cargo; the contracting firm in the United States worked on Aramco recordings only when they arrived. About 50 round-trip air shipments of these recordings were made, averaging somewhere around 50 to 60 pounds a shipment.

When 300 pounds of two and one half inch aluminum pipe were air-cargoed to Arabia a few weeks ago, the Producing operation in the Field was able successfully to tie in a new well. The 120 feet of pipe which were shipped in 20-foot lengths put the finishing touches on a new source of Arabian crude oil. The scheduled time of the well's first operations was kept almost to the minute.

Unusual in air cargo shipping is the adaptation of one of Aramco's DC-4's to carry high pressure well-fluid samples to the United States. Commercial airlines' regulations prohibit this general type of cargo. Aramco's Aviation Department took the normally hollow section of the wing near the fuselage and converted it to a small cargo compartment. The result met CAA requirements and allows quick delivery of the samples to laboratories in the United States.

On the lighter side, there have been exceptional cases where Aramco has helped to bolster the slumping morale of some young lady employee, as in the case of the attractive miss who found herself short on party dresses with an important Field social function looming on the horizon. Friends in the United States, who the girl had notified, rushed her frilly garment to the airport in time to make one of Aramco's DC-4 flights out of New York. In plenty of time for the special event, the party dress was placed in the grateful young woman's hands in Dhahran.

The full strength complement of the Aviation Department at Dhahran includes 26 pilots, all Americans. The

maintenance group consists of 37 Americans, 21 Indians, 2 Italians, and 15 Arab trainees. There are 12 others, including 4 Palestinian Arabs in the administrative and dispatcher classifications. In Saudi Arabia, Aramco's headquarters field is at Dhahran. The two DC-4's, which spanned the 7000-miles from New York to Arabia 58 times last year, operate out of Idlewild International Airport, as do the chartered and commercial flights which swell the air cargo operation each month.

Progress Report

Since about the middle of 1949, six round trips a month have been the schedule of the Aramco DC-4's. Heaviest cargo loads are of course carried on the eastbound flights to the Field. Since July 1949, the freight load factor, which is the ratio of load carried to total potential load, has risen from 87% for the last six months in 1949 to 98 per cent for the first nine months of this year. In 1951's first half, 220,000 ton miles were accumulated in internal Arabian air cargo operations as compared with 700,000 ton miles of overseas freight hauling by the DC-4's. Add to this the chartered flights and cargo taken on commercial airlines during any given part of the year, and the totals billow even more imposingly.

Seventeen years ago Aramco's first plane was a tiny single-engine Fairchild that acted as a courier, helped in mapping, and carried light emergency supplies. Today, in size and function, Aramco's air operation can substantially deal with the more than 400,000 square

miles of the Saudi Arabian concession area and the 7000 air miles that separate her oil fields from the New York headquarters. What has really happened is that a genuine air-lift has been established. Benefiting from these extending air activities, are practically all

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of the operations of the Company, the individual employees and the people and Government of Saudi Arabia. Air cargo, and aviation generally, has reached new peaks of civilian usefulness in helping supply an oil-hungry world and bring the rich products of the West to the waiting East.

INDIRECT AIR CARRIER

(Continued from Page 4)

than scheduled air carriers in the Expedited class and 10% less in the Regular service class. Expedited service rates provide for the movement of air cargo within twenty-four hours of receipt by the indirect air carrier. In most instances the freight is moved on the same day of receipt even though the freight is not picked up or received until late in the day. The Regular service rates provide for a maximum of a seventy-two hour waiting period exercised at the option of the indirect carrier. The seventy-two hour period is utilized by many shippers for documentation purposes but here again, as in the case of expedited traffic, shipments are moved as soon as they are ready to go.

Specific Commodity rates are pub-

lished to principal European cities, allowing a rate of 5% under the over one hundred pound rate via air carriers with a minimum weight requirement of 110 pounds.

The indirect air carrier rate structure is designed to attract shippers who ordinarily would hesitate to ship at the higher rates. Although such rates are less than those of the scheduled air carriers, the carriers benefit from increased volume at a reduced handling cost. For example, a carrier might normally receive sixty or seventy shipments from various shippers in order to make up a ton of air cargo which represents that many airwaybills and different contacts. The receipt of a ton of air cargo from an indirect carrier, representing the shipments of sixty to seventy shippers means only one airwaybill and only one contact and only one credit risk. Then, too, the cargo so received by a carrier from a forwarder is normally considered "clean" cargo from the point of view that documentation and airway billing has been prepared by experts and is ready for manifesting.

For shippers and manufacturers with foreign letters of credit or any other banking problems dealing with international trade, A.E.I.A. has experienced very little difficulty along these lines. Past performance has shown that the banks are willing to accept and recognize A.E.I.A. as an indirect air carrier in compliance with honoring letters of credit, sight drafts and any other banking arrangements with overseas clients.

As a pioneer in the development of air cargo transportation, Air Express International Agency, Inc., feels confident that 1952 will see a tremendous growth in the volume of air cargo handled by the indirect air carriers due to the substantial savings offered to the shipper and the great advantages of a personalized special handling service which only the indirect air carriers can give. However, whether an indirect air carrier such as A.E.I.A. will be able to continue to hold the line on price and offer even greater savings in the future, rests squarely upon the shoulders of the shipper himself. Naturally such a saving is dependent upon volume and unless volume continues to build, the indirect air carrier will be forced into the position of having to increase his rates like everybody else, thus adding to the inflationary cycle.

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GUIDE TO AIR SHIPPING

(Continued from Page 10)

transfer problem exists at the New Jersey/New York airports, as REA will deliver the shipment to the designated carrier's airport receiving office. All REA rates include pick-up and delivery at no additional charge. Since REA air rates are somewhat higher than airfreight (airport-to-airport), an adjustment should be made for the pickup and delivery charges when comparing rates.

2. Air Parcel Post—Domestic

This is a service offered by the United States Postal Service and the rates are favorable only for small shipments. The service carries the same priority in airplane space as air mail, and the shipments will be delivered to the designated overseas carrier. Where the shipment is to be forwarded from New York Gateway by air cargo, all documents except the original copy of the shipper's letter of instructions may be included in or on the package. The original of the shipper's letter of instructions should be forwarded to the carrier via air mail. Shipments and original letters of instructions should be addressed to the selected overseas carrier at the appropriate New York airport, either New York International or La Guardia.

3. Air Parcel Post—International

This is a through-service for small parcels destined to certain countries with which the United States has signed reciprocal agreements. The rates are substantially higher than international air cargo rates, and therefore, use of the service is limited to the occasional shipper of small packages.

4. Airfreight Service

This service is offered by all domestic and overseas certificated, non-certificated and charter carriers and is used extensively by shippers because of the favorable rate structure. The carrier's airfreight tariff rates are computed on a per pound basis for airport-to-airport carriage. The domestic carriers' minimum charge varies with each airline, but in no case exceeds the charge for 50 pounds. Overseas rates also carry a minimum charge per shipment which varies with the destination of the shipment. Where a combination of domestic and overseas minimums are involved the overseas carriers quote a single minimum charge for through shipments. All rate structures are designed to encourage shipments of 100 pounds and over. Shipments with high valuation per pound are subject to

valuation charges ranging upward from 5 cents per 100 dollars. The rates do not include door-to-door service, but all domestic carriers have arrangements with local truckers for pick-up and delivery service at extra charge. The local shipper, therefore, can know in advance and prepay transfer or delivery charges, if any. Most certificated domestic air carriers have interline agreements with overseas air carriers providing for the transfer of cargo from the arriving domestic carrier to the departing overseas carrier, regardless of airport, at no charge to the shipper. Should pick-up or delivery service in New York be required, rates are available which are as low as 55 cents per 100 pounds with a minimum of 1.10.

5. Airfreight Forwarders, Customs House Brokers and Bonded Storage

Airfreight Forwarders, as the shippers' and carriers' agents, can make all the necessary arrangements for shipping door-to-door and will prepare all the documents required for exporting. Some Domestic and International Freight Forwarders now operate as indirect carriers under a Letter of Registration from the Civil Aeronautics Board and, like REA, are authorized to publish rates and tariffs covering transportation and various other services between a large number of foreign and domestic points. Because of the specialized nature of services offered by these carriers, their tariff information has not been included in this report. Several Freight Forwarders, most of whom are Customs House Brokers, have offices in the new air cargo building at New York International Airport and are easy to locate. A General Order Warehouse, providing bonded storage facilities, is located at New York International Airport, and is operated by Manhattan Storage and Warehouse Company.

6. Rate Comparison of Domestic Air Services

By comparing the rates of REA and air parcel post with domestic airfreight charges, it is found, in general, that air parcel post offers the lowest rates for small shipments up to four or five pounds, while slightly larger shipments (depending upon distance) will travel more cheaply via REA. For example, Chicago, as a medium-distant point, can air ship to New York a package weighing up to five pounds least expensively via parcel post. A shipment weighing between five and twenty pounds should be dispatched via airfreight to take advantage of the lowest charges, even when additional charges for a pick up in Chicago and

delivery in New York are included (the latter charge usually is not applicable for overseas shipments). At cities more distant from New York, the REA—Airfreight breaking point is usually lower. From Dallas, for instance, shipments weighing eleven pounds or more, would move at a more favorable rate by airfreight. In any case, where a general commodity shipment weighs under 100 pounds, the charges via all three media should always be compared.

C. Specific Commodity and Directional Rates

In addition to their general commodity rates, most carriers publish in their tariffs lower specific commodity rates for special, large shipments between certain pairs of cities. Frequently, these rates are directional in that they are, for example, applicable only to east-bound traffic. For example, a 300-pound air shipment of automobile accessories moving from Milwaukee to New York would cost 20.85 under a general commodity rate, but under a specific commodity rate the charge would be only 17.61, or a saving of 16%. On the same shipment forwarded from New York to Glasgow, Scotland, by using the specific commodity rate a saving of 54.00 or 23% would be made. Similarly, a shipment of drugs from Los Angeles through New York to Damascus, Syria, weighing 2,200 pounds would realize a saving of 913.00 or 30% by qualifying for the specific commodity rate. In some cases, particularly for small shipments, the lower air rates on these commodities compete favorably with surface transportation. Occasionally it may be found that the air rates are lower than some surface rates. In any event, the airline, or its authorized agent, should be consulted for the lowest possible rate for each commodity and destination.

D. Transfer of Rail and Truck Shipments to Airports

1. Rail

To the best of our knowledge, all shipments arriving at The Port of New York by rail freight for dispatch abroad by air are L.C.L. Door-to-door delivery service can be specified to the accepting railroad. L.C.L. shipments consigned to the overseas carrier's air cargo receiving station at the designated airport will be carried to the appropriate rail freight terminal. From this point there is a delivery charge to the designated airport. This charge amounts to 37 cents per 100 pounds with a minimum of 37 cents per shipment delivered to New York International Airport or La

Guardia Airport by the Long Island Railroad. Carriers serving Newark impose a delivery charge of 27 cents per 100 pounds with a minimum of 27 cents per shipment. It is suggested, therefore, that out of state shippers using L.C.L. service prepay the above delivery charge to the originating rail carrier to preclude delay in the delivery of their shipments from the rail freight terminal to the air carrier at the designated airport.

2. Truck

Shipments arriving by truck from inland points must be delivered to the overseas carrier at the proper airport or its New York City drop station. Arrangements for such delivery can be made by the shipper at the point of origin and the charges prepaid accordingly.

E. Air Waybills and Export Documentation

1. Air Waybills

The International Air Waybill is issued by most domestic air carriers and covers the transportation of the shipment from point of origin to point of destination, including all transfers enroute between carriers. Shippers should request the issuance of this air waybill on all export shipments. The International air waybill also has other advantages in that it is preferable for the banking documents, insurance coverage, etc.

The Domestic Air Waybill covers the carriage of the shipment from the domestic airport of origin to the domestic airport at destination and, theoretically, does not include the transfer of the cargo to overseas carrier upon arrival.

2. Export Documentation

All shipments must be accompanied by the necessary documents. To avoid delays at the New York Gateway and possible fines or penalties to the consignee by foreign governments. United States Export Licenses, shippers' Export Declarations and copies of the commercial invoice in good order are the principal United States Government requirements. Certain documents are also required by countries of destination and these requirements vary according to prevailing regulations. Regardless of how the shipment is forwarded to the Gateway, these documents should be securely attached. As an additional precaution, it may be well to air mail duplicate copies to the carrier when forwarding shipments to the Gateway by surface means. Another acceptable practice is to double wrap the shipment, showing the overseas carrier as the consignee on the outer

wrapping, and placing the documents and the address of the ultimate consignee on the inner wrapper. Before exporting, shippers should ascertain the latest requirements and restrictions from the proper Consulate, field office, banks engaged in foreign trade or other informed authority. Overseas air carriers or Foreign Freight Forwarders can be of assistance.

F. Suggestions for expediting your shipments

Although shipping details may be handled either by you or by your agent, attention to the following considerations will expedite your shipments via the New York Gateway:

1. Check airline schedules to see that your shipment is receiving the direct routing.
2. Check the volume as well as weight of each shipment. Perhaps a substantial saving can be realized by improved packing and crating. (250 cubic inches one pound)
3. Is the shipment addressed properly?
4. Are all of the necessary marking on the shipment?
5. Have the necessary documents been included and securely attached to the package in a heavy envelope?

G. Documentary Check List

1. Shipper's Export Declaration.
2. Commercial Invoice and Copies.
3. Shipper's Letter of Instructions or Air Waybill.
4. Consular Invoice.
5. Statement of "Ultimate Destination—Diversion Prohibited." (must appear on all of above documents)
6. Export License.
7. Certificate of Origin.
8. Import Permit or Import License.
9. "Notice of Intent" for U. S. Customs Drawback.
10. Sanitary Certificate (plants, seeds, bulbs, etc.).
11. Certificate of Purity (pharmaceuticals, animal and meat products, etc.).
12. Disinfection Certificate (used clothing, blankets, etc.).

NOTE:

Shipments will be subject to detention at airport of export in the event of omission of necessary documents. Shippers should seek advice from the U. S. Customs or Field Office of the

Office of International Trade when in doubt concerning the proper license classification or requirement covering their shipment. The Department of Commerce, Office of International Trade, issues annually the "Comprehensive Export Schedule," supplemented by a weekly "Current Export Bulletin," which together provide an

up-to-date and complete volume of export control regulations, interpretations, and procedures. The schedule and supplements may be purchased from any field office of the Department of Commerce or from the Superintendent of Documents, United States Government Printing Office, Washington 25, D. C.

COMPARISON CHART

(Continued from Page 28)

(The Performance Estimates Are Based on I.C.A.N. Conditions at a Maximum Take-Off Weight of 127,000 lb.)

SPEED DATA	Maximum level speed at 9,000 feet	212 knots
	Maximum cruising speed at 6,000 feet	196 knots
	Maximum weak mixture cruising speed at 14,000 feet	173 knots
	Cruising speed for best range at 10,000 feet	147 knots
CLIMB DATA	Climb on four engines at climb power—Sea level	800 ft./min.
	Climb on three engines at climb power—Sea level	365 ft./min.
	Service ceiling—Four engines	18,000 feet
	Three engines	12,000 feet
	Time to height with four engines at climb power	
	— 1,000 feet	1.25 mins.
	5,000 feet	6.3 mins.
	10,000 feet	13.7 mins.
TAKE-OFF DATA	Rate of Climb on three engines with take-off power and flap setting—one propeller wind-milling—Sea level	420 ft./min.
	Distance to clear 50 ft. at 100,000 lb.	820 yards
	127,000 lb.	1,100 yards
	Distance to unstuck at maximum take-off weight	670 yards
LANDING DATA	Accelerate-stop distance at full load, one engine failing at moment of take-off	1,160 yards
	Using wheel brakes and braking propellers—The distance from 50 ft. to rest at 100,000 lb.	610 yards
	126,000 lb.	800 yards
	Landing run at maximum landing weight	230 yards
DIMENSIONS	Rate of Climb on take-off power (4 engines) and flaps in landing position—Sea level	790 ft./min.
	Span	162 feet
	Length	99 feet 2 inches
	Height	32 feet 6 inches
AREAS	Ground clearance under rudders	13 feet 5 inches
	Undercarriage track	33 feet 5 inches
	Tailplane span	42 feet 2 inches
	Aileron span (each)	35 feet 2 inches
WEIGHTS	Flap span (each)	32 feet 7 inches
	Gross Wing	2,916 square feet
	Total Ailerons (2) aft of hinge line	168 square feet
	Total Flaps (2)	422 square feet
	Gross Tailplane and Elevator	527 square feet
	Total Elevator aft of hinge line	144 square feet
	Gross Fin and Rudder	388 square feet
	Total Rudder (2) aft of hinge line	124 square feet
	Maximum loaded weight	127,000 pounds
	Tare weight	73,058 pounds
	Total structure weight	40,656 pounds
	Total power plant weight	22,756 pounds

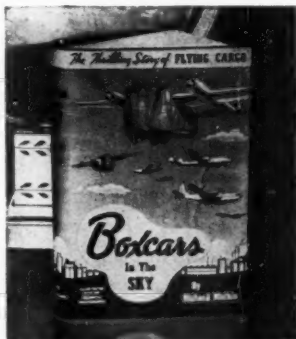
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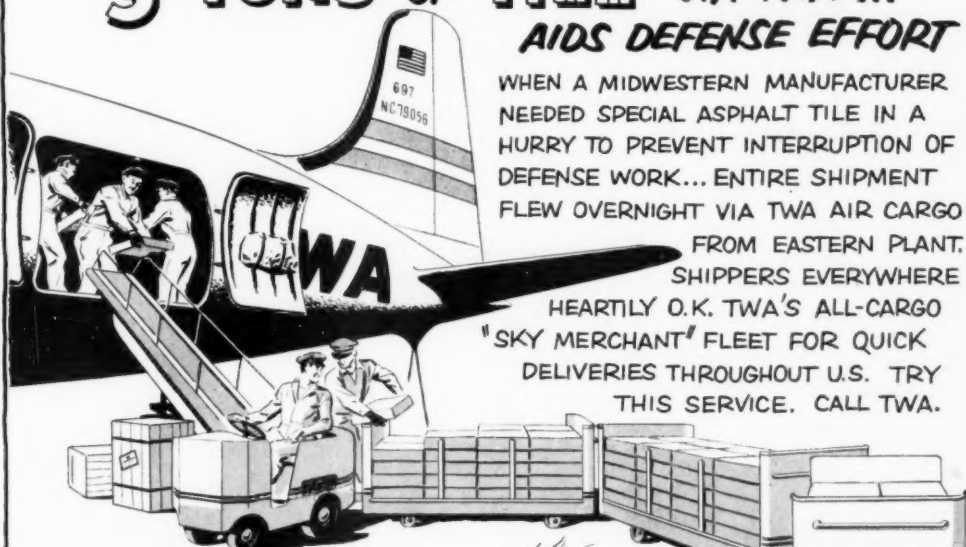
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